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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/019,062  | 12/27/2001  | Josef Froehler       | 449122020000        | 1767             |
| 25227   | 7590        | 11/01/2005           | EXAMINER            |                  |
| MORRISON & FOERSTER LLP<br>1650 TYSONS BOULEVARD<br>SUITE 300<br>MCLEAN, VA 22102 |             |                      |                     | ELALLAM, AHMED   |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
|   |             | 2668                 |                     |                  |

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/019,062             | FROEHLER ET AL.     |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | AHMED ELALLAM          | 2668                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 December 2001.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-21 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 27 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

HANH NGUYEN  
PRIMARY EXAMINER

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/27/01, 4/12/02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Specification***

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The disclosure is objected to because of the following informalities:

On page 5, line 36, the reference made to claims 1 and 19 is improper since claims may be subject to Amendment/cancellation. Reference to numbered claims should be deleted from the specification.

Similar remarks apply to the reference made to: claim 2, on page 6, line 36; claim 4 on page 7, line 21; claim 6, on page 8, line 1, claim 8, on page 8, line 15.

Appropriate correction is required.

On page 12, lines 26 and 32, the respective phrases “routed via the illustrated optical network termination unit ONU1...3” and “routed via the optical network termination unit ONU1...3” should be corrected to reflect that the unit ONU1...3 is actually a plurality of units. Stated differently, reference is made to a single unit, while the term “ONU1...3” refers to a plurality of ONU units. Similarly the phrase “unit ONU1...3” on page 13, line 16 suffers from the same deficiency.

Applicants are required to correct similar typo error that may still be present throughout the specification.

### ***Claim Objections***

3. Claims 4-18 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-18 have not been further treated on the merits.

Art Unit: 2668

4. Claims 1-21 are objected to because of the following informalities:

Claims 1-21 have parentheses that contains abbreviated reference to multiple elements, in most cases it is not clear to what specific element among the plurality of elements the reference is made. Information within parentheses should be deleted.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1 and 19, the specification doesn't adequately describe the limitation "the transmission resource elements (tpr1...3) which are allocated to the decentralized communications devices (ONU1...3) are at least partially reduced". More specifically, the specification doesn't describe how the "transmission resource elements" are reduced.

Claims 2-18, and 20-21 depend from respective independent claims 1 and 19 thus they are subject to the same rejection.

Art Unit: 2668

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 19, it is not clear what is meant by the claimed limitation of "modification means using which the extent of the reduced transmission resources element which is allocated to each decentralized communications device is modified or retained as a function of the recording result". More specifically, the claimed "using which the extent" in linking the rest of the phrase is confusing. Examiner interpreted this limitation to mean retaining or modifying the resource element allocated in accordance with the recording results.

Claims 20-21 depend from claim 19, thus they are subject to the same rejections.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghaibeh et al, US 5,926,478. Hereinafter referred to as Ghaibeh.

Regarding claim 1, with reference to figures 1, 10, 10A and 11, Ghaibeh discloses a method for matching transmission resources between head-end 22 (figure 1) (claimed central communication device) and a number of network units (NUs) 26 (claimed decentralized communication devices), the headend allocates upstream time slots to each network unit as function of the state of the connection that is routed via the respective allocated time slots (permits), see column 6, lines 60-68, and column 7, lines 1-10. (Examiner interpreted the claimed transmission resource element(s) of being timeslots as described in the specification (spec, page18, and lines 34-35)). (Claimed method for matching transmission resources between a central and a number of decentralized communications devices in which the central communication device allocates a transmission resource element to each decentralized communication device as a function of the quality and/or transmission characteristics of at least one connection which is routed via the respective transmission resource element).

Ghaibeh further discloses allocating the permits (time slots) to NUs comprises VBR, ABR and CBR permits, and wherein each NU having at least one ATM cell in a respective VBR, ABR and CBR is given an equal allocation of the available upstream bandwidth for a respective service priority, see column 10, lines 60-67 and column 11, lines 1-12. Ghaibeh further discloses taking account of CDV (cell delay variation) in the provisioning of permits, see column 11, lines 27-44. (Examiner interpreted the allocation of time slots (dynamic allocation) to each NUs by the Headend in accordance with the class of traffic (CBR VBR... etc) (claimed quality) , and the tolerance level (claimed characteristics) of the connection type of each NU as being the claimed transmission

Art Unit: 2668

resource elements allocated to the decentralized communication devices are partially reduced, and the quality and/or the transmission characteristics of the at least one connection is determined, and the extent of each reduced transmission resource element which is allocated to a decentralized communication device is modified or retained as a function of the quality).

Regarding claims 2 and 3, Ghaibeh discloses the permits are determined based on the demand for bandwidth, wherein the bandwidth is dynamically and adaptively granted among NUs. See column 1, lines 61-67, column 10, lines 47-67, and column 11, lines 1-11.

Regarding claim 19 (as best understood), with reference to figures 1, 10, 10A and 11, Ghaibeh discloses a communication arrangement having a headend 22 (figure 1) (claimed central communication device) and a number of network units (NUs) 26 (claimed decentralized communication devices), the headend allocates upstream time slots to each network unit as function of the state of the connection that is routed via the respective allocated time slots (permits) using fiber network (24, 25, figure 1) (the fiber network is interpreted of being the claimed transmission medium arranged between the central and the decentralized communication devices and have a transmission resource) , see column 6, lines 60-68, and column 7, lines 1-10.. The headend comprises a HEMAC (Headend media access controller) (claimed control unit (MAC) arranged in the central communications device) for providing permit (time slot allocation) as a function of requested ATM service connections. (Examiner interpreted

the claimed transmission resource element(s) of being timeslots as described in the specification (spec, page18, lines 34-35)).

Ghaibeh further discloses allocating the permits (time slots) to NUs comprises VBR, ABR and CBR permits, and wherein each NU having at least one ATM cell in a respective VBR, ABR and CBR is given an equal allocation of the available upstream bandwidth for a respective service priority, see column 10, lines 60-67 and column 11, lines 1-12. Ghaibeh further discloses taking account of CDV (cell delay variation) in the provisioning of permits, see column 11, lines 27-44, wherein NU transmits a request information which contains a status count of the number of ATM cells awaiting upstream transmission, and receiving by the headend updated ATM cell queue information from a group of NUs, see column 2, lines 51-67 and column 3, lines 1-7. (Examiner interpreted the allocation of time slots (dynamic allocation) to each NUs by the HEMAC in accordance with the class of traffic (CBR VBR...etc) (claimed quality) , and the tolerance level (claimed characteristics) of the connection type of each NU as being the claimed transmission resource elements allocated to the decentralized communication devices are partially reduced, and the NU transmitting a request information which contains a status count of the number of ATM cells awaiting upstream transmission as being the claimed "recording means for recording the quality and or the transmission characteristics of the at least one connection means for transmitting the recording result to the central communication device) (Note: means for transmitting are inherent to Ghaibeh, because that is needed for the transmission of the request), (Examiner interpreted the allocation of time slots to the NUs (permits) by the HEMAC in

accordance with the received ATM cell queue information received from the NUs group as being the claimed control unit has modification means using which the extent of the reduced transmission resource element which is allocated to each decentralized communications device is modified or retained as a function of the recording result).

Regarding claim 21, as indicated above with reference to base claim 20, Ghaibeh discloses the connection being ATM connection such as CBR , ABR, VBR,..., (claimed at least one connection which is routed via the allocated transmission resource element is implemented using Asynchronous Transfer Mode ATM, with the ATM connection being configured with an ATM service class defined by the ATM forum, which in each case specifies the quality and the transmission characteristics of the ATM connection);

receiving by the headend updated ATM cell queue information from a group of NUs, using counters (means for recording) for monitoring the CBR, ABR and VBR service queues filling level, see column 2, lines 51-67, column 3, lines 1-7, column 9, lines 58-67 and column 10, lines 1-11. (Claimed at least one queue is provided in each decentralized communication device for temporary storage of the information to be transmitted in the at least one ATM connection, and each decentralized communications device has filling level recording means for recording the current queue filling level of the at least one queue and transmitting the recording result to the control unit which is arranged in the central communication device);

Ghaibeh further discloses taking account of CDV (cell delay variation) in granting the permit (TDM slot) on dynamic fashion for different class of traffic, and based on the

received queue level in each NU request, see, column 2, lines 51-67, column 3, lines 1-7, column 11, lines 27-44, column 10, lines 47-67, and column 11, lines 1-11. (Examiner interpreted the dynamic slot allocation of Ghaibeh based on received queues level for each class of traffic information (CBR ...VBR) from each NU as being the claimed quality and the transmission characteristics of the respective ATM connections are determined by assessing the transmitted recording results, and the transmission results, and the transmission resource elements which are allocated to the decentralized communication devices are modified as a function of the quality and the transmission characteristics).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Duckering et al, US 6,721,325; Glade, US (6,643,290); Veres et al, US (6,614,790); Lyles et al, US (6,563,829); Wright et al, US (6,411,410); Quayle, US (6,317,234); and Fan et al, US (6,104,698).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner  
Art Unit 2668  
24 October 2005



HANH NGUYEN  
PRIMARY EXAMINER